USCMS Engineer Status Report for August 2003

Natalia Ratnikova

September 3, 2003

1 Work Performed This Month

This is a joint report for work performed in July and August

*** Packaging and software distribution for PCP ***

Produced distributions for all official requests coming from the RefDB, and in addition few private requests for tests purposes. Tests and adjustments of binary distributions (handling X11 libraries, condor-compliant executables, analyzing environment to produce more compact darballs etc.) .

Discussed possible architectures and tools for distributing applications for the production.

The following strategy was chosen: DAR files will be put into SRB for distribution. The copy will be still maintained on the web (the backup mechanism still to be provided). In the DPE environment master site downloads distribution from the SRB, then MOP will take care to send applications to the worker sites.

Discussed with Michael the SRB features, authorization, usage and installation details.

Put newly created DARfiles into SRB at CERN (as cmsprod). Installed SRB on cmsp4 to test file transfer from CERN to FNAL: OK (feedback sent to Michael). Updated accordingly download instructions.

*** Software installation and support ***

CMS OO software is currently actively developed to provide transition to the new persistency mechanisms. This resulted in many pre-releases and multiple versions developed in parallel (see statistics below), the backward

compatibility between versions being broken in many cases, e.g. data generated by one version can not be read or processed by the next version etc. Since no useful (in long term) data could be produced from most versions of software, and in order to avoid confusion and waisted efforts/resources, the following strategy has being chosen (together with Hans):

- versions used in official production are installed and made available at Fermilab.

- in addition (e.g. in case of specific user request) most stable and tested version can be installed after consultation with both user(s) and project release coordinator(s).

Compiled new compilers (GCC 3.2 and GCC 3.2.3) and installed on AFS.

Agreed and provided instructions and cern-created rpms for local installation on the UAF (eventually this should go to the CMS desktop configuration as well), and libshift.so, required for most binary code pre-compiled at CERN.

Installed OO software on the UAF cluster using XCMSi tool and Stephan's distribution kit for DVD. Provided detailed feedback on detected problems and some missing components to Stephan and tool developers: all problems were sorted out. So now ORCA_7_2_2 and all required externals are available locally on the UAF, tested productions examples and provided Hans and users with the detailed usage instructions (will appear on Hans's 'getting started' web page).

Removed earlier installed old and buggy versions (ORCA_7_0_0, ORCA_7_1_0, ORCA_7_1_2).

Installed all latest CMSIM and CMKIN versions on afs, adjusted examples for FNAL environment, provided detailed instructions to Hans for the 'getting started' document.

Set up $CMS_PATH/physics/mc_generators directory for extra physics software (COMPHEP), in a specially dedicated afs volume.

Verified software functionality, catched some fleas after os/hardware upgrades on UAF.

Here is some interesting statistics for the illustration:

Total number (releases + prereleases) installed at CERN during July-August 2003:

ORCA: 20 (6 + 14)

COBRA: 13 (4 + 9)

OSCAR: 9 (3 + 6)

IGUANA: 4 (4 + 0)

... only 4(3+1) of 20 ORCA installations survived after clean-up due to space limitations .

*** Developments ***

refdbdar (part of OCTOPUS project)

- automatically handles requests for cmkin and cmsim distributions: implemented three sub-classes of the class Packager: CMKIN_packager, CMSIM_packager. DAR_packager will take care of scram managed projects.

- automatically produced release notes (Release Notes class implemented by Timofei)

- fixed all bugs/problems reported in Savannah, some not urgent requests pending.

Projects watcher/viewer (Timofei enhancements to his last summer project):

- now can watch non-scram managed projects as well: cmsim and cmkin;

- added interface to add/remove projects manually

- incorporated the web page with instructions for each available version (Hans's request): default instructions can be provided for each project in the separate script.

BOA developments (most of work is done by Timofei, we had many detailed discussions of both the concept and implementation details):

- analyzed, verified and improved BOA OO model and break down into classes and sub-classes: provided with the UML diagrams.

- went through Pacmanized project installation with simple test suites.

- worked on implementation of the stated machine for processing installation steps for scramified projects and tracking the status of the installation.

- elaborated the plug-in mechanisms.

- unfortunately we had to interrupt this interesting and creative work and switch to on-going projects refdbdar and watcher/viewer to enhance their functionality.

cacheman (new)

- simple utility (in python) for managing pacman caches: extracts package specific information from the pacman files, to be used for DPE release notes preparation in conjunction with the document template developed by Judy Nicholls.

*** Managing DPE releases ***

- established the infrastructure for DPE releases: CVS support, prerelease sequences, packaging conventions. The caches are specially organized to provide easy updates, with the strict version control in CVS.

- wrote release notes, including contents, installation instructions, introductory text etc, supported up-to-date DPE deployment info on the top gridinfo page.

- verified packaging: dependencies, contents, update possibilities.

- set up dpetest machine (former Shafqat's home desktop) exclusively for DPE testing.

- tested installation, updatability, configuration, environment setup for DPE packages and components.

- DPE integration and releases: DPE2_0_0, DPE2_0_1 (bug-fix), DPE_2_1_0 .

- studied Grid3 structure to insure DPE future compatibility with Grid3.

- discussed various pacman and packaging issues with Saul (most of them are going to be addressed in pacman3).

- proposed project for managing DPE release notes with the emphasis on general approaches, that could be helpful for managing any pacman caches. Working on realization of this project with Judy Nicholls.

2 Status of Deliverables

CMS software distribution requests for PCP are satisfied,

DPE releases for PCP and Grid3 are ready

CMS OO software installed on UAF

3 Plans For Next Month

DAR and RefDBDAR development to provide new requested features. DPE releases: provide utilities to simplfy cache management and release notes preparations (put together cacheman and Judy's template for DPE releases). Continue packaging and distributing CMS software applications for PCP.

4 Longer Term Plans

Same as above. Work with Hans on software support on the UAF. Upgrade uscms software web pages with projects availablity to display non-scram projects status and history. To sum up summer BOA developments and make up functional release.

5 Links To Supporting Documentation

- http://computing.fnal.gov/cms/software
- http://www.uscms.org/scpages/subsystems/gridinfo/DPE2_1_0.html
- http://computing.fnal.gov/cms/software/DPE/DPE2_0_1/RELEASE_NOTES.html
- http://computing.fnal.gov/cms/software/DPE/DPE2_0_0/RELEASE_NOTES.html
- http://www.uscms.org/scpages/subsystems/gridinfo.html
- http://home.fnal.gov/ natasha/octopus.html